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ABSTRACT

This publication, intended for administrators and technology planning teams in a wide range of educational settings, presents a set of guiding questions for technology planning that is both supported by current research and found in exemplary technology plans. The guide will help technology planning teams to start and guide a technology planning process, develop planning criteria, refine technology planning processes, analyze technology planning models, and review technology plans developed by other school districts and organizations. The first section discusses the basic principle of technology planning and presents guidelines for using this guide. Guiding questions for technology planning that address the following areas are presented in the next section: (1) creating a vision of learning; (2) how technology will be used to support this vision; (3) developing a supportive infrastructure, including professional development, training, technical support, networking, hardware, software, and facilities; (4) understanding the content of the technology plan; (5) garnering public support; (6) implementing the technology plan; (7) and evaluating the implementation of the technology plan. A concluding section discusses important factors in the technology planning process. A list of resources, including references and materials, technology planning models, and model technology plans is appended, as well as contact information for Regional Technology in Education Consortia. (DLS)

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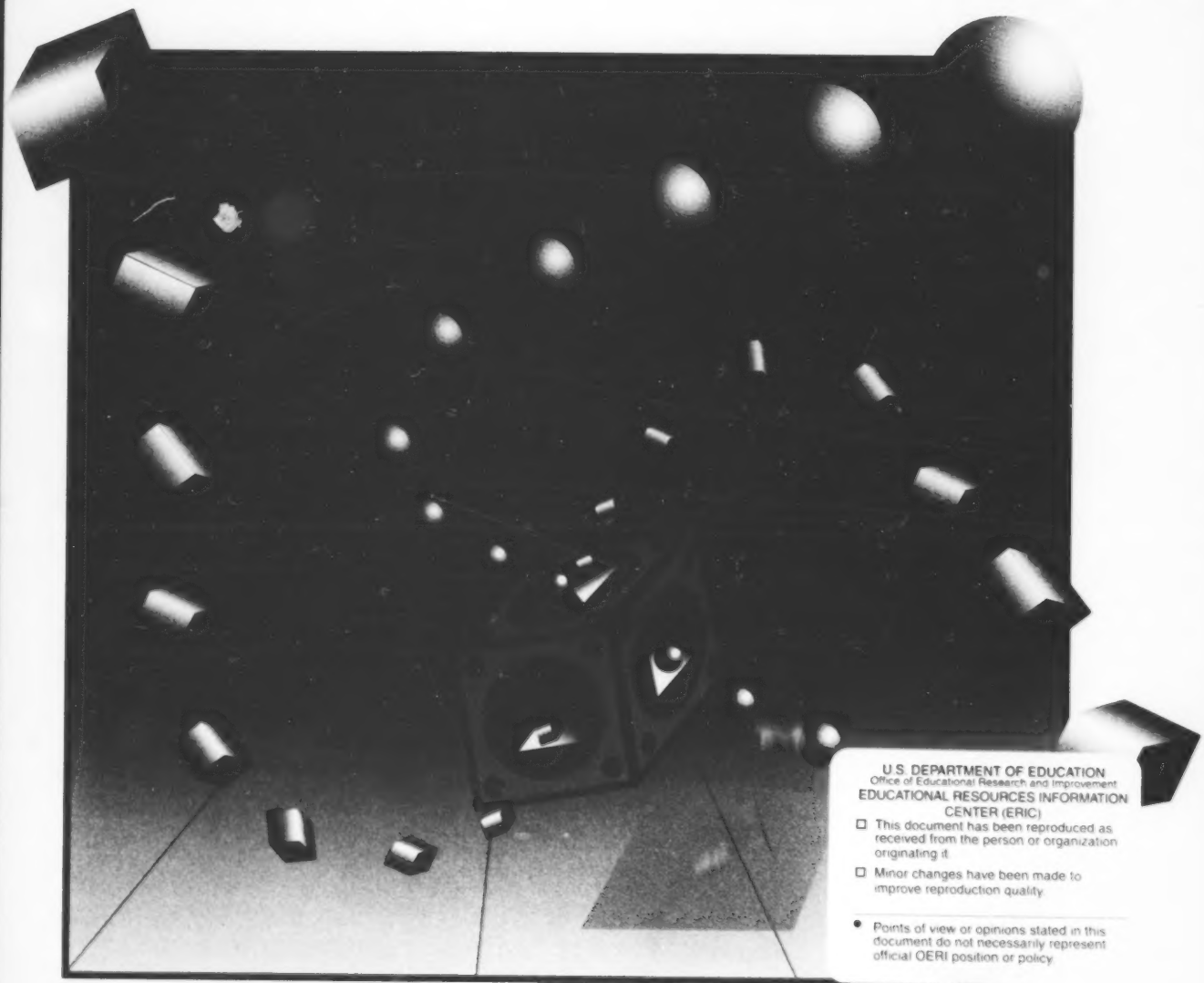
Guiding Questions for Technology Planning

Version 1.0

Created by the Regional Technology Education Consortium



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Foreword

In October 1995, six Regional Technology in Education Consortia (RTEC) were funded by the Office of Educational Research and Improvement (OERI), U.S. Department of Education. One of the RTECs' tasks was to survey and analyze technology plans. To that end, they formed a Technology Plan Task Force composed of representatives from each of the RTECs. This task force was headed by the North Central Regional Technology in Education Consortium (NCRTEC).

Two goals focused the efforts of the task force: to consider common elements in planning documents and to generate a set of guiding questions that would help technology planners as they consider the most significant issues related to technology planning. This document and tool, *Guiding Questions for Technology Planning, Version 1.0,* is the result of that effort.

Why Technology Planning?

Educators are finding the stakes increasing as the market for technology use in schools expands rapidly. As a result, technology planning is becoming a priority among schools, educational organizations, and policymakers. The breakneck pace of Internet growth looms as a major force for change for education. And vendors of hardware, software, and other technology products are putting increasing pressure on schools to purchase their wares. Districts that do not engage in thoughtful technology planning face the risk of making expensive mistakes and jeopardizing the education of their students.

Although many school districts and educational organizations are engaging in planning activities, too few are extending those activities to include technology with a focus on learning. To be effective, technology planning should assist educators in making the right purchasing decisions, improving their use of technology, using resources more efficiently, and, most important, *improving learning for all students* regardless of educational level, age, or socioeconomic background. A good technology planning process will bring clarity and long-term direction for the use of technology in both instructional and management practices (Hopey & Harvey-Morgan, 1995).

Technology planning can assist schools and educational organizations with the technology decision-making process by establishing standards, norms, and methods for evaluating, purchasing, implementing, and using technology. Furthermore, technology planning can help educational organizations identify program and technology priorities and match those priorities with organizational, human, and financial resources.

The *Guiding Questions for Technology Planning, Version 1.0,* tool is intended primarily for administrators and technology planning teams in a wide range of organizations including schools, school districts, community colleges, and adult education. However, others in various settings, such as teachers and parents, will also find it beneficial. The purpose of the planning tool is to assist those responsible for developing technology plans by stimulating discussion about potential components of a technology plan and to assist decision makers in the process of consensus building, which is essential to developing ownership in the implementation of the plan. While it is not intended to dictate practice, the tool does offer a set of *guiding questions* for technology planning that is both supported by current research and found in technology plans considered exemplary in the field. One of the basic premises of this tool and its questions is that the process of technology planning is as important as the technology plan itself.

The *Guiding Questions for Technology Planning, Version 1.0,* tool is aimed at helping technology planning teams:

- Jump start and guide a technology planning process
- Develop planning criteria
- Refine technology planning processes
- Analyze technology planning models
- Review technology plans developed by other school districts and organizations

Version 1.0 of the *Guiding Questions for Technology Planning* tool is the first draft of the document we plan to develop and refine over time. We would like your comments and suggestions about this document. In particular, what additional questions do you think we should add to this list? Send your comments to NCRTEC, 1900 Spring Road, Suite 300, Oak Brook, IL 60521-1480 or e-mail info@ncrel.org.

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What Is Technology Planning?

The following is a working definition of technology planning established by the RTEC Technology Plan Task Force:

> *A technology plan serves as a bridge between established standards and classroom practice. It articulates, organizes, and integrates the content and processes of education in a particular discipline with integration of appropriate technologies. It facilitates multiple levels of policy and curriculum decision making, especially in school districts, schools, and educational organizations that allow for supportive resource allocations.*

In general, planning is an ongoing process that translates organizational, public policy, and technology needs into concrete actions. It allows educational organizations to take advantage of technology innovations while minimizing the negative impact of unexpected challenges. Planning provides a road map for the implementation of technology and can result in more efficient expenditure of limited resources and an improvement in student achievement.

Technology plans reflect the policy and educational environment of a state or district. However, a technology plan by itself is not enough to ensure change. The RTEC Technology Plan Task Force believes that the processes of technology plan development, implementation, and evaluation are essential components of educational reform. A well-designed technology plan is a dynamic tool providing guidance for local innovation. Technology plans also represent opportunities for dialogue and professional development that encourage local decision making.

Basic Principles of Technology Planning

The *Guiding Questions for Technology Planning, Version 1.0,* tool is designed to help begin a technology planning process, select a planning model, and move the process forward. It is considered most useful when it is used within a larger planning process and not simply as an add-on or one-time discussion. A good technology planning process can be summed up in six or seven basic principles. These principles have been adapted by Hopey and Harvey-Morgan (1995) and are based in part on a model developed by Shirley (1988).

Technology planning for education should:

- Be an organized and continuous process, use a simple straightforward planning model, and result in a document that improves how technology is used for instruction, management, assessment, and communications.
- Take into account the mission and philosophy of the organization and be "owned" by that organization, its administrators, and instructors.

(While outside assistance, such as that provided by a consultant, can bring a broad perspective and knowledgeable opinions to the technology planning process, the process must have the commitment of decision makers and staff.)

- Be broad but realistic in scope, with economical and technically feasible solutions.
- Involve all the stakeholders—including administrators, instructors, staff members, students, parents, community leaders, and technology experts—with experience in education.
- Identify the strengths and weaknesses of the organization and how each will impact the implementation of technology.
- Formalize the procedures and methods for making technology decisions, including the setting of priorities and the purchase, evaluation, upgrading, and use of technology.
- Be driven by educational goals and objectives rather than by technological developments.

Before Using This Tool

Regardless of a school's size or experience, two essential ingredients are necessary to make planning successful (Below, Morrisey, & Acomb, 1987). First, all administrators and instructors must understand their roles and tasks. Second, there must be an organizational commitment to both the technology plan and the technology planning process.

Therefore, before undertaking technology planning or using this tool, it is important to have the support of the institutional leaders, staff, and instructors. Some simple preplanning will encourage participation in the process and minimize later setbacks. The following set of suggested activities can help educational organizations get started with technology planning:

- Decide who should be involved, what role each person will play in the planning and implementation of technology, and if a committee or advisory group should be assembled.
- Preview other planning processes that the organization has completed and identify any useful insights for improving this planning process.
- Review the planning processes of other schools and organizations to identify useful material that can serve as a model.
- Identify a lead person or "change agent" who will organize the planning process and make sure everyone involved has adequate input.
- Determine who will be responsible for writing the plan.
- Determine a timeline for completing the plan.

How to Use This Tool

Figure 1 presents the seven categories that organize the *Guiding Questions for Technology Planning, Version 1.0,* tool. These categories are not steps but areas of consideration. Each category is defined by a central questions (e.g., What is your vision of learning?) and subdivided into several follow-up questions. The diagram points out that five of these categories should be undertaken against a backdrop of the context of planning as well as a system of ongoing evaluation.

The questions in this tool may be followed in either the order presented or in another order, or pieces of it may be pulled out and applied to the development and/or revision of specific elements of a technology plan. The tool may be used by an individual to get started, although we strongly encourage group application within an organized planning process to maximize ownership of the process.

- *Creating a Vision:* What is your vision of learning?
- *Designing for Learning:* How will you use technology to support your vision of learning?
- *Designing the Infrastructure:* How will you develop a supportive infrastructure?
- *Context of Planning:* Do you understand the context of your technology planning process?
- *Garnering Public Support:* How will you garner public support for you plan?
- *Implementing a Plan:* How will you implement your plan?
- *Ongoing Evaluation:* How will you evaluate the implementation of your technology plan?

Figure 1

Once you've assembled your planning team, we suggest that you begin your planning process by reviewing three types of resources (sources for these materials are listed in Appendix A):

- Technology planning models
- Technology planning guides
- Sample technology plans

Begin by giving one or more of these resources to each member of your to team to review and to determine the following: How does each resource address each set of questions? Is it relevant to your particular setting? Which ones seem most consistent with your views on technology and learning? Have team members come together to share their findings in a jigsaw fashion. Reviewers should discuss the strengths and weaknesses of each reviewed resource. This activity will help each reviewer become better informed as to the criteria, questions addressed, and information important to consider in technology planning. Through an engaging discussion, the planning team can then begin to make informed and educated decisions as to what should and should not be contained in their technology plan.

The next step is to select or design a planning process. You may choose one of the planning models reviewed or customize your own. You will need to set timelines, determine responsibilities, and set in motion a process that will lead to a long-term technology plan that can be presented to your school board or other decision-making body for approval.

Once these process decisions have been made, *Guiding Questions for Technology Planning, Version 1.0,* can be used again to move the planning process forward by helping the team develop and refine their technology plan. The tool should naturally lead individuals involved in the process to examine the depth of material and information the technology plan will address. However, the most important rule of thumb in using the tool is that each technology process or technology plan is unique. Although across schools, districts, and regions of the country there will be similarities among technology plans, each school or district will have its own set of exceptions, particulars, strengths, and weaknesses. Nor is there only one way or method for using the tool. The tool is only a starting point; the questions are designed to guide the technology planning process.

Keeping the technology process moving forward will at times be a challenge and may require outside assistance. Each of the six RTECs (See Appendix B) have consultants on their staff who are trained in how to effectively use the *Guiding Questions for Technology Planning, Version 1.0,* tool and in how to conduct an effective and productive planning process. Since technical assistance to schools, schools districts, educational organizations, and state agencies will be crucial during the process, the RTECs can be called upon to assist your technology planning team when technical needs arise. You may also want to obtain technology planning support resources that are available to help with your process.

Guiding Questions for Technology Planning

What Is Your Vision of Learning?

A vision of learning is critical to the technology planning process. It should be the primary driver of all decisions concerning which technology is purchased and how it will be used. Without a vision of learning there is little hope that technology will contribute to improved student learning. It should reflect what an organization thinks the learning process could be like given the broad adoption of technology (Massachusetts Software Council, 1994). The vision should be creative while at the same time realistic. The ultimate vision of learning and how technology will be applied must reflect the students and clients served, the resources available, and the commitment and willingness of the staff and students to use technology. Establishing a vision for learning will never be complete; changes and adjustments will occur. Disagreements will be numerous. But a vision is shared not individualized. The following questions should be addressed when creating a vision for learning:

- Describe what an observer would see and hear in a school in which students were actively engaged and achieving to high levels in a challenging curriculum. Consider:
  - The tasks and activities that students would be engaged in
  - How teachers would assess student learning and performance
  - What teachers would be doing
  - What materials and resources students and teachers would be using
- How is this vision of learning different than what occurs now in your school? Consider:
  - The tasks and activities that students would be engaged in
  - How teachers would assess student learning and performance
  - What teachers would be doing
  - What materials and resources students and teachers would be using
- How is your vision linked to and/or supportive of other visions of high student achievement (e.g., SCANS skills, National Council of Teachers of Mathematics reports, and so on), curriculum frameworks, assessments, special needs requirement, and mandates?
- Describe what an observer would see and hear in a school in which the professional development of teachers and staff reflected your vision of learning.

How Will You Use Technology to Support Your Vision of Learning?

Technology lends itself well to learning and instruction (Massachusetts Software Council, 1994) because it is a powerful tool that, when properly implemented, improves student learning and achievement. However, teachers have little incentive to tackle the technical and scheduling problems associated with technology unless they have a clear idea of how it can improve teaching and learning (Means, Blando, Olson, Middleton, Morocco, Remz, & Zorfass, 1993). Exactly which educational goals a technology plan should address and attempt to accomplish must be determined before the technology plan is implemented (Holmes & Rawitsch, 1993).

Technology should not drive educational decisions or learning. Rather, decision making should be based on the learning and teaching needs of the student. Technology cannot prescribe for a teacher which students should use the technology, how often it should be used, or how to integrate technology into existing instructional practices. Unless teachers start out with specific technology goals that support their vision of learning, technology will most likely be used to reinforce the status quo (Cohen, 1988; Cuban, 1986).

There is evidence that when learning and technology goals are not decided upon before technology implementation, technology can become a drain on resources and add to the burdens of teachers who are already trying to do too much (Piele, 1989). This problem can be avoided by formulating a vision for learning that connects to educational goals, values, and objectives for technology use. Once the stakeholders involved understand the vision and see how technology will make their lives better, they are likely to become more open to technology planning and implementation. The following questions should be addressed when planning how to use technology to support a vision of learning.

- How will technology be used to provide and support a challenging curriculum through engaging instructional practices (e.g., collaborative learning, problem-based learning, problem solving, critical thinking, constructivist classrooms, project-based learning, and so on)? Consider:
  - Learning tasks that are authentic, challenging, and multidisciplinary
  - Assessments that are performance-based, generative, seamless and ongoing, and equitable
  - Instructional models that are interactive and generative
  - Learning contexts that are collaborative, knowledge building, and empathetic
  - Grouping strategies that are flexible, equitable, and heterogeneous
  - Teacher roles as facilitators, guides, colearners, and coinvestigators
  - Student roles as explorers, cognitive apprentices, teachers, and producers

- What educational technology skills will be a part of your curriculum and how will teaching them to students and staff enhance and support your broader instructional goals?
- How will technology be used to support an articulated prekindergarten-to-adult learning program for all students?
- How will technology be used to support changes in the roles and responsibilities of students, teachers, administrators, parents, community members, and others in order to achieve your vision?
- How will technology be used to support organizational and governance structures that are consistent with your vision of learning?
- How will technology be used to support and provide meaningful professional development experiences for staff?
- How will technology be used to support your school's accountability and assessment system?
- How will technology be used to support positive home-school-community collaborations?
- How will technology be used to support the provision of comprehensive services (e.g., school-based, school-linked health and social services)?

Developing a Supportive Infrastructure

The infrastructure consists of two parts: human resources—which deals with professional learning and support—and technology—which deals with hardware, software, and facilities. With technological change occurring at a rapid pace, purchasers of new technology sometimes feel hard pressed to keep up (Fine, 1991). School districts, due to limited budgets and technical expertise, have a difficult time choosing and buying technology. Often they lack adequate information about the newest technologies and how to use them; or they do not take into account the level of training and staff development needed to use the technology. The key to technology planning is to make informed decisions. Without good information about the nuts and bolts of technology (i.e., the hardware and software) planners are at a disadvantage. The best way to overcome this problem is to take a broad view of technology and educate planners and staff about current and emerging technologies and their benefits and then realize that implementing technology is not a one-time thing but an ongoing and continuous process that requires a supportive infrastructure that is flexible enough to deal with the rapid pace of technological change. The following questions should be addressed when planning for a supportive infrastructure:

Professional Development, Training, Technical Support

- How will you find out what skills your staff and students currently have and what skills they will need to fulfill your plan's objectives?
- How will you design and implement a professional development and training strategy that meets the needs of your staff?
- How will you use technology to provide professional development, training, and ongoing technical support, and to support teachers as they integrate technology into the curriculum?
- Who will be responsible for ensuring and coordinating professional development?
- Who will be responsible for providing technical assistance and support?
- How will you build technical support capacity within your staff so that equipment will be maintained and kept reliable?
- What are your contingencies for providing just-in-time services when the technology breaks down?

Networking, Hardware, Software, Facilities

- What level of networking will be required to support your vision of learning?
- What hardware specifications are needed to support your vision of learning?
- How will you deal with obsolescence, maintenance, and amortization?
- How will you make use of existing technology?
- What software is required to support your vision of learning?
- How will software be reviewed and purchased?
- What building facilities exist or are needed, and what modifications must be made to support your vision of learning?
- How will you implement, maintain, and sustain the equipment, software, and the network for extended periods, and who will be responsible?

Understanding the Context of Your Technology Plan

Undertaking technology planning is not difficult, but many times planners behave as if they are working in a vacuum without trying to understand the broader context. This behavior is hazardous and ultimately will lead to problems or, in rare cases, failure. The best way to achieve success is to encourage participation and anticipate problems in order to minimize setbacks. An effective technology planning process should be consciously and formally organized. The following questions should be addressed when understanding the context of your technology plan:

- Who should you involve in planning from the outset in order to garner support and commitment at all levels of the school district (board members, superintendent, technology coordinator, principals, teachers, parents, and so on)?
- What supports and barriers exist within the policy, resources (human, material, funding), decision making, and other relevant contextual areas that will influence the success of your plan?
- Since a technology plan should be embedded and supportive of an overall learning plan focused on high achievement for all students, how will your plan relate to, support, and integrate with other educational plans at the school, district, state, and federal levels?

Garnering Public Support

Public support is essential to ensure the success and longevity of planning implementation. The following questions should be addressed when developing strategies to garner public support:

- What kinds and levels of public support are necessary to make the implementation of your technology plan successful and sustainable?
- What public relations activities will you engage in to promote the effective long-term implementation of your technology plan?
- How will you create opportunities for school staff and the community to share information in order to foster positive relationships?
- How will you garner support from community and business leadership, for example, in long-term public and private partnerships?
- How will you connect and interact with related organizations (museums, libraries, adult literacy programs, higher education, community-based organizations, and so on) to improve student learning?
- How will you leverage investments (e.g., provide training and support for parents and community members) to provide technology access and service to the wider community?

- What other human and community resources exist, including businesses and libraries, to support the plan?
- What funding policies and opportunities exist for implementing your plan?
- How and when will you report results to stakeholders?

Implementing Your Plan

Many planners believe their job is complete after a plan is written, but in actuality it has only begun. A written technology plan has direction and long-term technology goals. However, for each new technology introduced to an organization, there will be stages of implementation that include resource development (budget), evaluation, selection, installation, training, pilot projects, mini-implementations, and, finally, full implementation. These stages should all be reflected in a technology plan. It is also important to remember not to judge technology as ineffective when it is not implemented according to the plan (Holmes & Rawitsch, 1993). Flexibility, patience, and adaptability are essential for any kind of change process and certainly for implementing technology. The following questions should be addressed when planning the implementation of your plan:

- What is the timeline for meeting the goals of your plan?
- Who is responsible for achieving milestones on the timelines?
- What professional development strategies will you use?
- How will you provide time for ongoing staff development, including time to practice and learn new technologies?
- What is your plan for networking, acquiring hardware and software, and updating the facility?
- How will you deal with the rapid changes in technology?
- What funding is available currently?
- How will funding be provided over the life of the plan?
- How will you coordinate and leverage a variety of funding resources to support your plan?
- How will you deal with contingencies such as changes in leadership and changes in budget?
- How will you determine which program area, discipline, or staff will receive highest priorities for receiving technologies?
- Who (or what group) will be responsible for implementing the technology plan?
- What incentives and sanctions will you implement to ensure that everyone achieves a high level of technological proficiency?

- How will you ensure equity of access to technology and engaged learning experiences for all students?
- How will your instructional use of technology address district, state, and federal mandates including curriculum, special needs, minority populations, and equity issues?
- What new policies are needed to support implementation of your plan?

Evaluating the Implementation of Your Technology Plan

Technology implementation is a continuous process that adapts to the organization's changing circumstances and includes ongoing evaluation. Effective evaluation will force planners to rethink and adapt objectives, priorities, and strategies as implementation proceeds. Continuous evaluation also facilitates making changes if aspects of the plan are not working.

Evaluating the implementation of a technology plan can be conducted by various means. Simple observations, both negative and positive, that have been made by students and teachers using the technology are the most helpful. Interviews and informal meetings with both instructors and students can draw out the lessons that both groups have learned from using the technology. A simple written survey can assist in measuring the extent to which the plan has met its original objectives and expected outcomes. The following questions should be addressed when planning the evaluation of the implementation of your technology plan:

- How and when will you evaluate the impact your technology plan implementation has on student performance?
- Who will be responsible for collecting ongoing data to assess the effectiveness of the plan and its implementation?
- What windows of opportunity exist for reviewing the technology plan? (For example, the plan might be reviewed during curriculum review cycles.)
- How will accountability for implementation be assessed?
- How will you assess the level of technological proficiency gained by students, teachers, and staff?
- How will you use technology to evaluate teaching and learning?
- What is the key indicator of success for each component of the plan?
- How will you analyze the effectiveness of disbursement decisions in light of implementation priorities?
- How will you analyze implementation decisions to accommodate for changes as a result of new information and technologies?
- What organizational mechanism will you create that allows changes in the implementation of the technology plan and in the plan itself?

Conclusions

It is apparent that participation in a systematic planning process can help school districts, schools, and educational organizations capitalize on the opportunities available through the use of technology. Systematic planning—whether simple or complex—can help maximize the investment of resources in technology.

Administrative involvement and leadership are crucial to the technology planning and implementation process. If organizational leaders do not understand and support the technology plan, it will be difficult to implement and can be either intentionally or inadvertently sabotaged.

Many people perceive that without a technology champion or advocate who will take responsibility for promoting the planning process and implementing the plan, there will be no major push to make technology an integrated part of the organization. If the plan relies on only one person, however, it will almost certainly be unsuccessful. Implementation is best when tasks and duties are shared and delegated, and when individuals across the organization buy into the use of technology and the planning process.

Effective implementation of technology requires a change in culture—one that encourages people to think differently about the teaching and learning processes and the possibilities for technology use. Training and positive role modeling are important for helping to facilitate the change in attitudes and culture. Also, attention to internal and external marketing (garnering support) can help to change attitudes and build enthusiasm and participation. This kind of marketing should be based upon showing how technology will enhance the organization's purpose and goals and solve organizational and educational problems.

Flexibility is also a key ingredient of the technology planning process. Planners should set priorities, follow a timeline, and continue to evaluate progress. Yet, day-to-day demands will intervene, priorities will change, and resource availability is likely to be inconsistent. It is therefore important to be flexible, to expect the unexpected, and yet to remain committed to pushing forward the technology planning and implementation process.

Finally, while financial resources are likely to be scarce, the plan should not be budget driven. Rather, the learning vision and organizational, technological ,and educational objectives should drive the plan. Budgeting activities should complement and follow the planning process. They are more likely to be successful when an organization knows clearly where it is headed in terms of technology use and has a written plan outlining that use. The familiar maxim holds true for technology planning: "If you don't know where you're going, you're likely to end up somewhere else" and conversely: "If you know where you're going, you're likely to get there much more quickly."

Appendix A: Resources

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Illinois State Board of Education Center for Learning Technologies and North Central Regional Educational Laboratory, 1995

Planning for Technology Applications in Education
J. D. Cradler, Far West Regional Educational Laboratory, 1994

Developing an Effective Instructional Technology Plan
Larry Anderson, National Center for Technology Planning, Mississippi State University, 1995

Planning for Technology: A Guidebook for School Administrators
Richard D. Lumley and Gerald D. Bailey, Scholastic, 1993

Teaching, Learning and Technology
Apple Computer, Inc., 1991

Application Transfer Study
International Business Machines, Inc. (IBM), 1991

Planning for the Effective Use of Technology
Technology and Information Educational Services (TIES), 1993

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Technology and Innovations in Education (TIE), 1994

Planning for Learning and Technology
Center for Excellence in Education, Indiana University, 1995

Technology Planning for Adult Literacy
National Center on Adult Literacy, University of Pennsylvania, 1995

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C. E. Hopey and J. Harvey-Morgan, University of Pennsylvania, National Center on Adult Literacy, 1995.

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Model Technology Plans

Bethlehem (PA) School District (Winners of the first National Technology Planning Competition)
http://www2.msstate.edu/~lsa1/sip/belhle.html

Holmen (WI) School District (Winners of the first National Technology Planning Competition)
http://www2.msstate.edu/~lsa1/sip/Holmen.html

Homewood-Flossmoor (IL) District 233 (Winners of the first National Technology Planning Competition)
http://www2.msstate.edu/~lsa1/sip/Homewood.html

Madison (CT) Public Schools (The Big Winner of the first National Technology Planning Competition)
http://www2.msstate.edu/~lsa1/sip/madison.html

Turkey Run School District - Marshall, IN (Winners of the first National Technology Planning Competition)
http://www2.msstate.edu/~lsa1/sip/turkey.html

Planning Resources on the World Wide Web
The Switched-On Classroom
http://www.swcouncil.org/switch2.html

Learning Through Technology: A Planning and Implementation Guide
http://www.ncrel.org/ncrel/tandl/techandlearn.html

Grants and Other (People's) Money
http://quest.arc.nasa.gov/grants.html

The National Center for Technology Planning (NCTP)
http://www2.msstate.edu/~lsa1/nctp/index.html

Plugging In: Choosing and Using Educational Technology
http://www.ncrel.org/ncrel/sdrs/edtalk/toc.htm

World Wide Web in Education (WWWEDU)
http://k12.cnidr.org:90/wwwedu.html

Classroom Connect
http://www.classroom.net/

LiveText Educational Resources
http://www.ilt.columbia.edu/k12/livetext/index.html

Common Knowledge: Pittsburgh
http://info.ckp.edu/

MicroSoft Corporation's Focus on K-12.
http://www.microsoft.com/k-12/default.htm

GNN Education Center
http://gnn.com/gnn/wic/wics/ed.new.html

Pathways to School Improvement
http://www.ncrel.org/pathways.htm

North Central Regional Technology in Education Consortium
http://www.ncrel.org/ncrtec/

Regional Technology in-Education Consortia
http://scrtec.rtec.org/~rtc/

Creating Learning Communities: Practical, Universal Networking for Learning in Schools and Homes
http://www.cosn.org/EPIE.html

From Now On Archive (Technology Planning)
http://www.pacificrim.net/~mckenzie/fnoindex/html#Technology

Guidebook for Developing an Effective Instructional Technology Plan
http://www2.msstate.edu/~lsa1/nctp/Guidebook.pdf

National Center for Technology Planning
http://www2.msstate.edu/~lsa1/nctp/index.html

Resource Page for Technology Coordinators
http://www.cybergate.com/~blesig/hoffman/tech

SCR*TEC Home/Schools Technology Planning
http://scrtec.rtec.org/schools/tech_plans/

Teachers and Technology: Making the Connection
http://bsuweb.bemidji.msus.edu/~govdocs/e-docs/ota/teacher_tech/toc.html

Technology Coordinators Web Page
http://www.wwu.edu/~kenr/TCsite

Technology Policy, Research & Planning Information & Resources
http://www.fwl.org/techpolicy/welcome.html

The Unpredictable Certainty Information Infrastructure Through 2000
http://www.nap.edu/readingroom/books/unpredictable/index.html

Appendix B: Addresses of RTECs

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